ADMINISTRATION REPORT OF CIVIL WORKS

OF THE

PUBLIC WORKS DEPARTMENT,

(GENERAL BRANCH,)

BOMBAY PRESIDENCY,

FOR THE YEAR

1885-86.

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PUBLIC WORKS DEPARTMENT, BOMBAY,

(GENERAL BRANCH,)

FOR THE YEAR 1885-86.

GENERAL REMARKS.

1. Shortly after the commencement of the official year, in May 1885, the Government of India intimated that the expenditure which it had been found necessary to sanction on military preparations on the North-West Frontier of India, was likely to impose so severe a strain on the finances, that the adoption of measures for the reduction of expenditure of all kinds could not with safety be delayed longer, and called upon this Government to take immediate steps for suspending all optional expenditure, including both Provincial and Imperial; in doing so, they invited special attention to the feasibility of making material reductions in the Public Works expenditure, in which it was stated that the largest retrenchments, at a time of pressure, could usually be effected. Orders were accordingly issued in this Department suspending outlay on all new works entered in the budget, and curtailing the grants for others, and the Superintending Engineers were called upon to submit definite proposals for reducing the grants for works in their divisions, selecting in all cases those in which it could be effected with the least loss or detriment to the service. On a consideration of the proposals submitted, it was ultimately decided, in August 1885, with the consent of the Financial Department, that the total grant for Provincial Public Works, which originally stood at 37½ lákhs, should be reduced by Rs. 4,14,000, of which Rs. 2,67,300 were to be taken from the grant for Original Works, Civil Buildings, Rs. 1,45,700 from that for Communications, and Rs. 1,000 from that for Tools and Plant.

2. Simultaneously with the above reduction from the Provincial grant, orders were received from the Government of India in the Military and Public Works Departments, reducing the grants for Imperial Military and Imperial Civil Works by Rs. 2,00,000 and Rs. 17,400, respectively; the latter amount being subsequently increased by Rs. 50,056, or to a total of Rs. 67,456.

3. Thus a reduction of (in round numbers) nearly 7 lákhs was made in the Public Works grants of the year, in consequence of which many works of an urgent and necessary nature were postponed, and the grants allotted to others were curtailed, and progress retarded.

4. With the above reductions, and certain additions subsequently made, the total expenditure of the year on Civil Works, including Contribution and Local works, was Rs. 49,96,670, as per margin. The expenditure in India was Rs. 49,96,222. In round figures the expenditure on New Works was Rs. 19⅜ lákhs; on Repairs, Rs. 19$\frac{1}{20}$ lákhs; on Establishment, Rs. 10$\frac{9}{10}$ lákhs; on Tools and Plant, Rs. ⅝ lákh.

	Rs.
In India.	
Imperial...	1,32,067
Provincial	34,71,683
Contributions	3,00,979
Local Funds	10,91,493
Total Rs.	49,96,222
In England	448
Grand Total Rs....	49,96,670

II.—CIVIL WORKS.

I.—CIVIL BUILDINGS.

I.—IMPERIAL SERVICES.

5. The expenditure under this head was Rs. 1,32,515, of which Rs. 54,691 was for Original Works; Rs. 52,327 for Repairs; Rs. 23,936 for Establishment; and Rs. 1,561 for Tools and Plant. The works carried out were as follows:—

3.—SALT.

6. At Ratnágiri, a new Salt Custom House, estimated to cost Rs. 5,728, was sanctioned; the sanction having, however, been received late in the year, Rs. 2,555 only, on foundations and collection of materials, could be expended.

7. At Shiroda, in the Ratnágiri District, the approach road leading to the Salt Custom House, commenced last year, was completed; also, in the Surat Collectorate, the road from Dungri Railway Station, on the B. B. & C. I. Railway, to the Dharasna Salt Pans, with the exception of a portion of metalling and consolidation, Rs. 14,102 having been expended out of the sanctioned amount of Rs. 15,305.

8. During the year, a bungalow for the use of the Supervising Officers of the Salt Dept has been completed at Khárághoda: it consists of 3 main rooms with verandahs, bath and store-rooms, together with servants' quarters, and an open room for petitioners, and the total cost has been Rs. 11,200. Another bungalow, for the Inspector of the Northern Frontier Preventive Line at Urnej, has also been completed at a cost of Rs. 8,838; also improvements to the Salt Storage platform at Khárághoda, and additions, in the shape of brick floors, to the Inspectors' Bungalows on the Northern Frontier Line.

9. The work of raising and strengthening the embankment of the reservoir of the Khárághoda and Udu water works, found necessary owing to the increased supply required, was completed at a cost of Rs. 5,361. The 9-inch scouring sluice having proved inadequate to empty the tank before the rains, it was decided to enlarge it to 2′ × 3′. The work is in progress, and will be completed before the rains.

4.—OPIUM.

10. The existing number of testing rooms in the Opium Warehouse at Bombay, having been found insufficient, four additional rooms have been erected at an outlay of Rs. 2,853. One of these is on the ground floor, in continuation of two existing ones, and over these three an upper story has been put up, to form three more rooms. [Outlay shown under Provincial].

5.—MINT.

11. In the Mint at Bombay, the chimney was rebuilt at an outlay of Rs. 4,013, and masonry bedding provided for a new boiler at an outlay of Rs. 456; the work of constructing masonry foundations for new engines was in progress, and Rs. 2,149 expended up to the close of the year; as also a new roof over the old coining room, and tunnels fer new shafting, commenced in the past year, on which two latter the outlay for the year amounted to Rs. 14,188, and the total outlay to Rs. 15,542.

7.—TELEGRAPHS.

12. A new building for a combined Post and Telegraph Office is being erected on Malabár Hill, Bombay. It consists of a main building and an out-building. In the former, there are separate rooms for Post and Telegraph Offices, and also separate quarters for the Post Master and a Telegraph Signaller; in the out-building there are rooms for 4 peons. The entire cost is estimated at Rs. 15,431, of which Rs. 5,000 were expended during the year.

13. A shed for the storage of pitch for the Persian Gulf Telegraph at Manora, 100 × 30 feet, was completed during the year, at a cost of Rs. 3,965.

II.—PROVINCIAL SERVICES.

14. The expenditure from Provincial and Local Funds, and Contributions, under this head was Rs. 15,91,435, of which Rs. 8,39,529 was for Original Works; Rs. 3,69,189 for Repairs; Rs. 3,66,894 for Establishment; and Rs. 15,523 for Tools and Plant. The principal works carried out during the year were as follows:—

12.—ADMINISTRATION.

15. Under this head during the year, Mámlatdárs' Kacheris were in progress or completed, on the standard plan, at Muddebihál, Bágalkot and Bijápur in the Bijapur Collectorate; at Wái in the Sátára, Sangamner in the Ahmednagar, and Sakri in the Khándesh Collectorates; also at Nadiád in the Kaira Collectorate. The Kacheris at Wái and Sakri are to be made defensible.

16. The building for the State and Alienation Record Office at Poona, alluded to in the last report, and commenced in 1884-85, made but little progress during the year, the work having been suspended under the orders reducing expenditure in May 1885. The foundations have, however, been completed, and iron work to the value of Rs. 5,812 purchased; the actual outlay to end of the year having been Rs. 8,036, out of the estimated cost of Rs. 1,14,335. A record-room for the Mámlatdár's Kacheri at Anklesvar was in progress.

17. The Collector's Bungalow at Broach was completed at a total outlay of Rs. 29,955; and a witness-shed to the Collector's Kacheri at Dhulia constructed.

18. The following works were carried out in connection with Government Houses: The work of increasing the accommodation at Government House, Mahábaleshvar, by a detached building providing three additional rooms and one bath-room on the ground-floor, and one sitting-room, a bed-room, two dressing-rooms, and two bath-rooms on the upper floor, at an estimated cost of Rs. 31,989, was commenced in January 1886, and the foundations and plinth completed during the year at an outlay of Rs. 6,004. The "Terraces" Bungalow, which was originally purchased in 1884, was during the year added to the Government House Estate, and provided with a corrugated iron roof, in place of the old chupper-roof. At Ganesh Khind, certain improvements have been completed at a cost of Rs. 6,218.

19. The unfinished items of work on the buildings comprised in the scheme for the adaptation of certain ancient buildings at Bijápur for offices for the Collectorate head-quarters were completed, and the conversion of the northern arcade of the Granery into a Mámlatdár's Kacheri, and of the Gagan Mahál Gateway into a church, planting trees, and other improvements in the Arkilla, were in progress. The total estimated cost of the scheme is Rs. 3,15,200, out of which the total outlay to the end of the year has been Rs. 2,98,559.

20. Additions and alterations to the Residency Buildings at Rájkot, commenced in 1884-85, were completed during the year at a total outlay of Rs. 42,731.

21. Additions and alterations to the Commissioner's Press and Peons' quarters, &c., at Karáchi, the estimated cost of which is Rs. 7,510, were commenced in January last. They consist of three additional store-rooms, one $30' \times 20'$ for the storage of printing paper, a second $20' \times 18'$ for records, and the third $24' \times 20'$ for tents. All these rooms are fitted with iron shelves. In addition to these, quarters for seven peons have been provided, each room measuring $15' \times 10'$, with a verandah six feet broad in front. The total outlay of the year has been Rs. 2,925.

22. A distillery, estimated to cost Rs. 42,926, was sanctioned at Madihal, in the Dhárwár Collectorate, but owing to a difficulty in acquiring possession of the site, no progress was made beyond the collection of a small quantity of materials. At Bijápur a distillery, estimated to cost Rs. 22,461, was commenced, and Rs. 3,247 expended up to the close of the year.

23. A new Abkári Godown, with guard-room attached, the former consisting of a large room, $88\frac{1}{4} \times 50\frac{3}{4}$ feet, with walls of solid masonry, was commenced during the year at Aden, and the main building completed, with the exception of a portion of the flooring, roof, and sunshades; the outlay having been Rs. 8,122, out of an estimated cost of Rs 9,890 for the godown including guard-room.

24. A residence, with seed-room and out-houses, was constructed for the Superintendent of the Botanical Garden at Poona, at a cost of Rs. 5,905.

14.—LAW AND JUSTICE.

25. Under this head Subordinate Judges' Court-houses, on the standard plan, were in progress at Jalgaon and Bhúsával in the Khándesh Collectorate, both of which are expected to be completed during the coming monsoon; and the court-houses at Olpád in the Surat Collectorate, and Borsad in the Kaira Collectorate, were completed at an outlay of Rs. 14,615 and Rs. 14,620, respectively. Special repairs to the Adálat and subsidiary buildings at Kaira were also completed at a total cost of Rs. 10,995: the buildings provide accommodation for an Assistant Judge's, as well as for a Subordinate Judge's Court.

26. The new Court-house for the District Judge at Belgaum, alluded to in last year's report, made satisfactory progress during the year, all the masonry work having been completed, and the timber work under preparation.

27. At Bombay one of the rooms in the High Court building has been divided into two compartments, by means of a corrugated sheet iron partition, and fitted up with strong iron racks, for the storage and safe custody of the valuable records in charge of the Registration Department, at a cost of Rs. 3,836.

28. The new building for the Police Magistrates' Courts, fully described in the last year's report, has been raised in skeleton up to the level of the first-floor; the total outlay up to the end of the year having been Rs. 66,676, of which Rs. 40,162 represents the expenditure of the year.

15.—ECCLESIASTICAL.

29. Under this head, the church at Dhárwár, which had been suspended owing to certain alterations in the design being considered necessary, was resumed in November 1885, and the masonry work, with the exception of the tower, completed, and the timber work of the roof prepared; the total outlay having been Rs. 8,108, against the estimated cost of Rs. 10,197.

30. The new church at Poona, for the Society of St. John the Evangelist, described in the report for 1883-84, has been completed as originally designed, at an outlay of Rs. 42,894. Certain additions, comprising a campanile, baptistry, carriage porch, marble paving in nave aisles and chancel, and other fittings, have been proposed, the designs for which are under preparation by the Architectural Executive Engineer.

31. At Bombay the ground around the St. Mary's Church at Parel, reported as completed in the last year, was filled in, and the accounts finally closed, showing a total outlay on the work of Rs. 31,687. The new quarters for the Chaplains attached to St. Thomas' Cathedral, described in the last report, have approached completion, the expenditure up to the close of the year having been Rs. 45,002.

32. The Roman Catholic Chapel at Baroda, commenced in the last year, was proceeded with, and nearly completed by the end of September; but a revised estimate having been sanctioned, and contributions to cover half of the extra cost not being forthcoming, the work has been suspended. A watchman's hut was, however, built at a cost of Rs. 539 from Provincial Funds.

16.—JAILS.

33. The Criminal Jail at Sátára, and the Juvenile Reformatory at Poona, both described in last year's report, were proceeded with until the month of June, when both were suspended under the orders restricting expenditure, and were not resumed till February 1886. On the latter the progress has been very small; but on the former the outlay during the year has been Rs. 19,790, and the total expenditure to end of the year Rs. 47,340. Owing to the approaching opening of the West Deccan Branch of the Southern Marátha Railway, and the facility that will thereby be afforded for sending prisoners to the Central Jail at Poona, it has been proposed to provide less accommodation in the Sátára Jail than what was originally intended, by which the cost will be reduced from Rs. 1,01,011, the amount of the sanctioned estimate, to Rs. 68,760: the question is under consideration.

34. The upper story over the main entrance of the Yerrowda Jail, in progress from the past year, was completed at a cost of Rs. 4,762.

17.—POLICE.

35. Police Lines were completed during the year at Dápoli and Roha in the Ratnágiri Collectorate, and at Broach, in the Broach Collectorate, the total outlay on the latter having been Rs. 62,880; and the Police Lines at Násik were about half finished, the estimated cost being Rs. 69,220, and the total outlay to the end of the year Rs. 28,745.

36. The additions and alterations to the Police Lines at Ahmedabad, commenced in the past year, were completed during the year. The total expenditure on these lines, to accommodate 80 men, has been Rs. 20,953.

37. A new Faujdár's Kacheri has been constructed at Sholápur, at a cost of Rs. 3,877. This building consists of two stories, and provides accommodation for a Chief Constable's office room, and record and store-rooms, male and female lock-ups, and police guards on duty.

18.—EDUCATIONAL.

38. At Bombay the ground in the compound of the Elphinstone College has been raised and levelled at a cost of Rs. 3,325.

39. The Cathedral High School, alluded to in last year's report, is still in progress; the funds available being insufficient to allow of its speedy completion. During the year the masonry and wood work of the first floor of the east wing have been executed, and an outbuilding, consisting of a cook-room, 3 servants' rooms and a bath-room and privy for servants, was commenced and roofed in. The total expenditure up to 31st March 1886 has been Rs. 1,42,526.

40. A new building, for the College classes of the Free General Assembly's Institution, to be called the Wilson College, in honour of the memory of the founder, the late Dr. John Wilson, L.L.D., designed in the Gothic style, by the Architectural Executive Engineer, and estimated to cost Rs. 1,74,536, was commenced at Chaupáti. Its principal façade, measuring 216′ 6″ in length, is to be towards the Queen's Road. There is to be a ground floor and an upper floor over the whole building, with an extra floor in the principal stair-case room, which is placed behind the carriage porch. On either side of the stair-case hall on the ground floor, there are two class rooms, each measuring 21′ 6″ × 20′. At the south end of the building there is to be a large room, 70′ × 35′, for examinations, &c., and in the corresponding situation at the north end, there is to be a room

40′ × 24′ 6″ for chemical and physical laboratories. On the first floor there are two class rooms, 40′ 6″ × 25′, on the north side of the stair-case hall, and Professors' and Principal's rooms and reading rooms on the south side of the same. Immediately behind the stair-case hall, accommodation is provided for a servants' stair-case, and for lavatories and cloak rooms for students and Professors. On the second floor, over the stair-case hall, quarters are provided for the Resident Superintendent. In addition to the main building, seven detached buildings are proposed to be constructed as follows, *viz.*, blocks for students' quarters, a building for students' bath-rooms, and a second for cook-rooms, a coach-house and stable, Superintendent's cook-house, and servants' quarters, water closets, &c. Both blocks of students' quarters are to be upper-storied, each consisting of 16 rooms, measuring 10′ × 12′; 8 of these are to be on the ground floor, and 8 on the upper floor. There are four students' bath-rooms and three cook-rooms. The stable will accommodate three horses with a coach-house. The Superintendent's out-houses comprise one cook-room and two servants' rooms.

The foundation stone of this building was laid by His Excellency Sir James Fergusson, Governor of Bombay, on the 10th of March 1885, and the work was ordered to be commenced in October 1885; but as the nature of the soil on which the structure is to be erected was found to be such as to necessitate very deep foundations, a revised estimate for constructing the walls on pile foundations has been submitted, and sanctioned by Government. The total expenditure up to the 31st March 1886 has only been Rs. 1,542. Of the total estimated cost, Rs. 87,000 have been contributed by Government, who have, moreover, given the site, valued at Rs. 46,000, free of cost; and the balance has been raised by public subscriptions.

41. Of the new building for the Indo-British Institution, described in the last report, the masonry work of the ground floor, and the flooring of the first floor have been completed during the year; and the masonry work of the first floor and roof work are in progress. The outlay to the close of the year has been Rs. 40,648.

42. The High School at Broach, alluded to in the last report, has been almost completed, the total expenditure incurred having been Rs. 36,800, out of the sanctioned amount of Rs. 37,360.

43. At Poona, the work of restoration of the Vishrámbagh Palace, described in last year's report, was proceeded with, and the masonry work of the ground floor, as well as of the whole of the upper floor, has been completed, and the front verandah, including the diwánkhána, and the back portion and wings of the inner quadrangle, have been roofed over with Mangalore tiles; the expenditure up to the end of the year having been Rs. 29,128, or about half the estimated cost.

44. At the College of Science, there being no proper accommodation for teaching Practical Chemistry, a detached building, containing one room, 54 by 20 feet, one 30 × 20 feet, and one 20 × 10 feet, with a verandah on the south side, has been constructed in rear of the College, at a cost of Rs. 8,155.

45. The additions and alterations to the Convent Day School, a private building, commenced in the past year, have been completed at an outlay of Rs. 9,518.

46. A Mission School-house, on the three block plan, has been constructed at Ahmednagar, at a cost of Rs. 8,691. The cost was met from funds provided by the Society for the Propagation of the Gospel.

47. At Karáchi the work of adding an upper story to the Narayan Jaganath High School, referred to in last year's report, was completed at a cost of Rs. 11,086, half of which was contributed by the Municipality.

48. Local Fund school-houses have been completed during the year, at Bijápur and Honvad in the Bijápur Collectorate, for Rs. 4,624 and Rs. 3,316, respectively; and at Amalner and Bhusával, in the Khándesh Collectorate, for Rs. 9,821 and Rs. 10,117, respectively. A school-house at Yával, in the same Collectorate, commenced in 1884-85, and estimated to cost Rs. 17,050, was in progress, and Rs. 8,414 had been expended on it up to the end of the year; and a school-house at Baola, in the Ahmedabad Collectorate, estimated to cost Rs. 5,572, has been in progress, and will probably be completed before the monsoon of 1886. The Hindhi-Sindhi Girls' School at Hyderabad in Sind, to accommodate 150 girls, was completed.

49. The Tálukdári School at Wajiria, in the Rewa Kántha territory, commenced in the past year, was completed at a cost of Rs. 15,016, from funds contributed by the Native States.

19.—MEDICAL.

50. The Kama Hospital for women and children at Bombay, described in the last report, has nearly approached completion during the year; the outlay on it up to the close being Rs. 1,26,958.

51. At the Jamsetjee Jejeebhoy Hospital, the work of paving the floors of certain of the wards with Minton tiles, commenced in the past year, has been completed at a cost of Rs. 10,081. Additions and alterations have been carried out to the building used as an Obstetric Ward, for the purpose of providing examination and class rooms, at an outlay of Rs. 3,924; and as, in consequence, the carriage porch of the building was no longer available

for use as a place for prescribing for female patients, and there being no convenient space within the compound for a separate building, it has been considered necessary to enlarge the building hitherto used as the hospital students' quarters, in order that it may be used both as a dispensary for out-door patients, as well as for students' quarters, by constructing an upper story to the building, and adding verandahs on two sides of it; the ground floor being used for the dispensary, and the upper story for the students' quarters. The estimated cost is Rs. 10,801, of which Rs. 3,007 were expended up to the close of the year. Quarters for the Sisters of the Society of All Saints, who have undertaken the nursing duties at the Hospital, were sanctioned and commenced during the year, and have been nearly completed, a few minor items remaining to be completed in the next year. These quarters consist of a main building 86′6″ long, and 37′ wide, having a ground floor and an upper floor. On the ground floor is a sitting-room, a dining-room, an office-room, and a spare bed-room and two bathrooms; the first floor contains eight bed-rooms, with a bath-room attached to each. There is also an out-building, consisting of a cook-room and two servants' rooms. The estimated cost is Rs. 23,086, of which Rs. 18,640 were expended up to the close of the year.

52. At the Sassoon Hospital at Poona, the new latrines, commenced in the past year, were completed at a cost of Rs. 4,457.

53. The verandahs of the Civil Hospital at Rájkot were paved at an outlay of Rs. 2,665.

54. The Lunatic Asylum at Ratnágiri, described in the report for 1883-84, was nearly completed, with the exception of a few minor items. The total expenditure up to the close of the year was Rs. 89,602, against the estimated cost of Rs. 97,905.

55. In the Lunatic Asylum at Dhárwár, two of the rooms were converted into cells for ten patients, at an outlay of Rs 2,729.

56. Local Fund Dispensaries were completed at Navalgund in the Dhárwár District, and at Honávar in the Kánara District, at a cost of Rs. 9,990 and Rs. 3,556, respectively; and dispensaries were in progress at Akláj in the Sholápur Collectorate, Yeola in the Násik Collectorate, and Anand in the Kaira District; and certain additions and alterations were carried out to the dispensary at Lárkhána in the Shikárpur Collectorate, at a total outlay of Rs. 6,828, of which Rs. 4,828 were expended in the year.

57. An Asylum or Home for Lepers has been established at Trombay, an island in the Bombay Harbour, by carrying out certain alterations and additions to the bungalow known as the "Allbless Bungalow," which had been made over for the purpose, as a free gift, by the sons and heirs of the late Mr. Edalji Framji, to the Roman Catholic Bishop of Bombay, with whom the movement for establishing a home for this unfortunate class of people originated, and through whose instrumentality public interest was awakened to the subject, and subscriptions amounting to Rs. 4,670 raised, which have been supplemented by an equal grant from Government, who have also undertaken to defray half the annual cost of maintenance. The sanctioned estimate for the work amounted to Rs. 9,345, and provided for certain improvements and thorough repairs to the bungalow and its existing out-houses, as well as the erection of certain new necessary out-buildings, and a medical officer and servants' quarters. The work was completed during the year at an outlay of Rs. 9,284.

20.—MISCELLANEOUS.

58. The new Central Press Building at Bombay, described in the report for 1883-84, was in progress, and the masonry and cut-stone work of the ground and first floors nearly completed. It having, however, been resolved to add another story to the building for the accommodation of the Government records, a revision of the design became necessary, and the work was suspended pending the preparation of revised designs and estimates. In the revised designs submitted it is proposed to give the stability needed to bear the weight of the additional story, by providing rows of pilasters of Kurla stone within, adjoining the main walls of the east and west wings, to carry the girders of the floors, and to provide against lateral thrust by the addition of buttresses outside. The second floor, on which it is intended to place the records, is to be made fire-proof, by constructing it of iron lattice girders, placed from pilaster to pilaster, with rolled iron cross girders, Westwood and Bailie's flooring plates, and concrete finished with a layer of asphalte. In approving of these proposals, Government considered that the additional height thus to be given to the Central Press building, which occupies a most conspicuous position, called for exceptional treatment, and alternative designs for completing the building in the most suitable manner, with reference to the other buildings in that neighbourhood, were called for. Of four alternative designs submitted, that by Mr. Adams, the Architectural Executive Engineer, has been approved, and the working drawings and necessary details are under preparation. The building as originally designed was estimated to cost Rs. 4,18,598, and it is calculated that the additional story, with fire-proof floors, will cost upwards of Rs. 2 lakhs more. The total outlay to the close of the year was Rs. 2,32,444.

59. An office with out-houses for the Executive Engineer, Ratnágiri, at an estimated cost of Rs. 5,932, was put in hand, and a sum of Rs. 2,751 expended on it.

60. Stables for four stallions, and quarters for their syces, were commenced near the Police Lines at Ahmedabad. The estimated cost is Rs. 3,100, which is to be met equally from Provincial and Local Funds, and of which Rs. 1,500 were expended during the year.

II.—COMMUNICATIONS.

1.—ROADS.

61. The total outlay on Communications was Rs. 28,49,450, of which Rs. 7,79,328 was spent on Original Works; Rs. 14,25,558 on Repairs; Rs. 6,07,510 on Establishment; and Rs. 37,054 on Tools and Plant.

62. A map in three sheets is attached, on which are shown the principal lines of road in progress during the year.

63. Substantial progress in the year under report has been made in the Southern Division with the feeder roads to the new railways. On those connected with the West Deccan line, work, as under, has been done in the Belgaum Collectorate :—On the road from Nipáni to Mahálingpur, 21 miles in length, crossing the line at Chikodi Road, Rs. 28,051, against the total estimate of Rs. 2,03,848 (for roadway and smaller culverts and drains) have been spent; on the road from Hukeri to Gokák, 18 miles, crossing the railway at the Gokák Road Station, Rs. 19,977 against the estimate of Rs. 1,02,096; and on the road from Gokák to Navalgund, 45 miles, Rs. 45,874, against the estimate of Rs. 2,45,279; and provision has been made for continuing work on these three important lines in 1886-87. The road from Londa Railway Station to the Belgaum-Supa Road, a short road, under a mile in length, to connect the station with the adjacent Belgaum-Supa Road, the estimated cost of which is Rs. 3,836, was in hand, and will be completed by the rains of 1886. Londa is the junction of the West Deccan and Hubli-Marmagão lines.

64. The Belgaum-Panchgaon Road connects the two lines, East and West Deccan, from Belgaum on the West Deccan, to Bágalkot on the East Deccan, and is a feeder to both lines. On the portion of this road in the Sángli State, Rs. 4,550 have been expended during the year in metalling the surface.

65. The road from Nipáni to Dájipur has been completed as estimated for; Rs. 8,287 having been spent during the year, the total estimate being Rs. 1,87,461. This road also may be considered as a feeder to the West Deccan Line from Nipáni, but on it, as well as on the main feeders at Chikodi Road and Gokák Road, there are many rivers and large nálas unbridged, and until these bridges are built, the roads will not be fully efficient feeders in the wet season; plans and estimates for all the bridges have been submitted, and it is to be hoped that funds will in due course be forthcoming. Also on the Nipáni-Mahálingpur Road, there are gaps in Native territory—Kolhápur and Mudhol; but arrangements have been made by the Political Agent, Southern Marátha Country, to have these portions constructed.

66. Work as under has also been done in Dhárwár on the roads noted, all Railway feeders :—on the Dhárwár-Saundatti Road, (Local), of which 13 miles are in Dhárwár, and which is a feeder to the Hubli-Marmagão line, Rs. 11,953 have been expended, the total outlay having been Rs. 22,313, against the estimate of Rs. 33,512; the Havanur-Samasgi Road, feeder at Háveri Station to the Hubli-Harihar Railway, has been completed, Rs. 3,773 having been expended in the year, the estimated cost being Rs. 23,944; the Somankatti-Siralkop Road, 10½ miles in length, feeder at Byádgi Station to the Hubli-Harihar Railway, has been half completed, Rs. 7,974 having been expended in the year, out of the estimated cost of Rs. 26,972; and the Motebennur-Byádgi Road, a short road, three miles long, to connect Byádgi Station with the Poona-Harihar Road, has been nearly completed.

67. In Bijápur, a short road, 3⅛ miles long, from the town of Indi to the Indi Railway Station, East Deccan Line, the estimated cost of which is Rs. 12,068, has been about two-thirds made; the road from Muddebihál to Chimalgi, 19½ miles long, crossing the East Deccan Line at Almatti, on the Krishna river, reported on last year, has been in progress, the expenditure in the year having been Rs. 18,000, and the total Rs. 50,422, against the estimate of Rs. 85,906; and the feeder road, 6¼ miles long, from Guledgudd to Katigeri Station, the estimated cost of which is Rs. 34,151, has been about half made.

68. The improvements to the Krishna crossing at Kolhar have been nearly completed. There is now a paved crossing for the fair season, and approach roads to the ferry that works in the monsoon months—a double ferry boat.

69. In Kánara, improvements to the Tinai Ghát, at a cost of Rs. 4,511, chiefly for metal, have been made, with a view to fitting the ghát for the heavy cart traffic expected during the next two or three years, pending the completion of the ghát portions of the Hubli-Marmagão Railway, from Tinai Road Station, above ghâts, to Collem Station, below ghâts.

70. In Ratnágiri, the road from Sakharpe, at the foot of the Amba Ghát; to the town of Sangameshvar, the head of the navigation of a tidal creek, reported on last year, has been in progress, and is now approaching completion; the expenditure in the year having been Rs. 29,914, and the total Rs. 72,619, against the estimate of Rs. 84,153. In Kolába, improvements to the existing track from Pen to Panvel, estimated to cost Rs. 18,007, have been commenced—a local work, intended principally for the salt traffic from the extensive salt-pans near Pen.

71. The completion (now at hand) of the several lines of railway at present under construction in the Southern Division, cannot fail to greatly affect the system of cart-roads, and alter their present relative importance, and also call for a better class of roads, that is, roads fully bridged and with metalled surfaces, and this of course means greatly increased expenditure for maintenance, for it is not to be supposed that cart traffic will diminish on the roads because of the railways; it will certainly be quite the contrary, and will on the whole increase, but to what extent and on what lines, and whether it will to some extent prefer the sea to the railways, or quite abandon the sea for the railways, only experience *after* the completion of the railways can be relied upon to indicate.

72. The Kumbharli Ghát (Sátára) is not in the Southern (Public Works) Division, though the road from its foot to Chiplún on the coast is; but from its position it may be taken to be in the system of ghát roads in the Southern Division, and these are,—the Kumbharli Ghát leading to Chiplún; the Amba and Phonda Ghâts to ports in Ratnágiri; the Amboli Ghát to Vengurla; the Arbail Ghát to Kárwár; and the Devmani Ghát to Kumta,—all six first class ghát roads, fully bridged and metalled and passable at all seasons, by which the traffic is given its choice between the sea and the railways. What the result will be it would be rash to forecast, but it is not to be denied that the country is now, or will soon be, fairly supplied with roads and railways, perhaps more than it can maintain, and that it has been left to the traffic to select the lines it prefers, a principle perhaps better for the interests of the country than any endeavour to force traffic into certain channels. For Military purposes also, the system of roads is satisfactorily complete; from Poona to Harihar, on the border of Mysore, 352 miles, there is only one unbridged river, the Malprabha, in Belgaum, and that is of no great consequence, and this fine road is connected with the sea by the six ghát roads above enumerated, and also with the railway system by cross roads, either complete or in progress.

73. In the Central Division the roads in progress have been as follows:—In the Sátára Collectorate the feeder road from Wái to Watár Railway Station, which will connect Mahábaleshvar and Wái with the railway. It will be 20 miles in length, of which two miles are along the Surul-Mahábaleshvar road, a first class Provincial road, 14 miles along the Wái-Adurki, a third class local road, and 4 miles are entirely new road. It is intended to make the whole road into a first class Provincial road, embanked, bridged, and metalled throughout. The principal works on the line consist of a bridge over the Bánganga river at Oozarda, in the 6th mile, of eight spans of 20 feet each; another over a stream at Shirgaon, in the 10th mile, of two spans of 20 feet, and a third bridge of two spans of 30 feet each over the Vashna River at Pimpoda, in the 16th mile, in addition to a number of culverts of 10 feet and 15 feet spans, and some slab drains; there is also in the line a ghát, two miles in length, from the 10th to the 12th miles, having a gradient of 1 in 20. Considerable progress has been made during the year in the construction of bridges and drains, and in improving the portion of the old Local Fund road; the new portion of road was also commenced. The total estimate for the road complete throughout is Rs. 1,29,418, and the expenditure of the year has been Rs. 20,075.

74. The feeder road from Sátára to Padli Station was commenced. This road will be 10¼ miles in length, of which 6 miles are along the old Poona-Sátára road, a second class Local Fund road, having bridges over the Rivers Yenna and Krishna, and 4½ miles are new road. It is intended to make the whole road a first class Provincial road throughout, to be embanked, bridged and metalled. On the new portion of the road the only important work is a bridge, of three spans of 40 feet each, in the 10th mile, over the river Vashna. The total estimated cost of the work, including metalling and improving the Local Fund portion of the road, is Rs. 90,066, the expenditure of the year having been Rs. 19,811.

75. The construction of a masonry causeway over the Krishna river at Bhilowdi, in the Tásgaon Táluka, was commenced in March 1886, but owing to the height of water in the river, nothing was done beyond the collection of material. The estimated cost of the work is Rs. 3,123, and the expenditure during the year Rs. 848. This work is in connection with a feeder road from Ashta to Tásgaon Railway Station.

76. The increase in the rates of labour noticed in last year's report has been maintained as regards skilled labour; for coolie labour, however, in the portion of the district north of Sátára, where the railway works are for the most part completed, rates are returning to their former normal standard.

77. In the Poona District, the construction of the second section of the Lonávli-Paud Road was completed early in the year, and the road opened for traffic, the total expenditure up to the close of the year having been Rs. 4,943; the improvements to the Poona-Singhur Road (Local), consisting of the construction of nine road dams over certain nálas, and easing and improving the approaches to the same, at an estimated cost of Rs. 4,216, were in progress, and four dams constructed during the year; and the improvements to the Poona-Awlas Road (Local), which are of the same nature as those just described in connection with the Singhur Road, were also in progress, the number of dams to be constructed being 16, at an estimated cost of Rs. 9,788, of which five were constructed during the year.

78. In the Ahmednagar Collectorate, the following feeder roads to the Dhond and Manmad Railway were in progress:—1st. The feeder road from Bellápur Station to Nevása,

on which the works carried out consisted of the construction of the Lendhora masonry bridge, of 2 arches of 31 feet span each, up to the level of the backing (including the turning of the arches and removal of centerings), and the embanked approaches; the first seven masonry slab drains, and two aqueducts and three masonry dams, and all the earth and kutcha moorum embanking up to the Bellápur Station; and the construction of stores and out-houses at Nevása and Taklibhan. This road will provide a short line of communication for the Aurangabad traffic to the railway: it leaves the Nagar-Aurangabad Road near Khudke, six miles from the boundary at Toka, and its length to the Bellápur Station is nearly 24 miles. It will open up a fertile tract of country. The estimated cost is Rs. 1,36,874, of which Rs. 78,287 were spent up to the close of the year.

2nd. The feeder road from Vámbori to Khospuri, on which the work carried out during the year consisted of the construction of three concrete culverts (two of 10 feet and one of 18 feet span), three concrete drains (of 3 feet span), one 3 feet double-vent masonry slab drain, and three concrete dams; and supplying and spreading moorum and sand, and throwing up 126,006 cubic feet of embankment. This road starts at the junction of the Nagar-Pyton and Nagar-Toka roads, and is 6½ miles in length to the rising town of Vámbori, which is the centre of a large grain trade; thence a completed feeder road, of four miles in length, runs to Vámbori Station. The amount of the sanctioned estimate is Rs. 38,573; and the total expenditure has been Rs. 27,755.

3rd. The feeder road from Rahata to Chitali Railway Station, on which the remaining quantity of embankment in repairing side-slopes and of excavating, carting, and spreading moorum and sand, and rolling the road surface, were finished, and the road, including the Anundi nála, completed in every respect and opened for traffic in October last. The amount of the sanctioned estimate is Rs. 44,006, and the total expenditure Rs. 43,916.

4th. The feeder road from Pimpri Railway Station to Madhe Vadgaon, which has been completed. This road joins the Pimpri Station to the village of Vadgaon, on the Ahmednagar-Dhond Road, and is a continuation of the Pimpri-Shrígonda feeder road, completed in the year 1882. The length of this line is nearly 3·25 miles, and it cost Rs. 1,646 per mile. The estimated cost was Rs. 5,685, and the total expenditure Rs. 5,351.

And 5th. The feeder road from Vámbori Railway Station to Nagar-Málegaon Road, which has also been completed. The work done during the year consisted partly of embankment and cutting in earth and of cutting in hard moorum. The remaining quantities of excavating and carting moorum and sand, together with the work of stone kerbing and providing mile-stones, also spreading and rolling the road was finished, five drains, and a road dam to the Nágzira Nála were constructed, and the whole road completed and opened for traffic in November 1885. This feeder road connects Vámbori Railway Station with the Málegaon road in mile No. 17, and is nearly two miles in length. The estimated cost was Rs. 10,051; and the total expenditure Rs. 9,475.

79. The metalling of the Ahmednagar-Toka road was in progress. This is a part of the Nagar-Aurangabad road, and the traffic on it is very heavy, especially the cotton traffic, and the ordinary moorum surfacing has been found quite insufficient to keep it in proper order throughout the year. The estimated cost is Rs. 63,756; and the total expenditure Rs. 23,996.

80. On the road between Tisgaon and Pathardi, the earthwork was nearly completed up to Páthardi, and much moorum and sand supplied and spread, also embanking carried out. The length of this road is 7·33 miles, and the estimated cost Rs. 31,694, out of which the total expenditure to date has been Rs. 15,648.

81. On the road near Vita Ghát on the Loni-Bári Road, the drains, which were commenced after the monsoon of 1885, are still in progress. It is expected that the road will be opened for traffic in October next. A small quantity of earthwork has been done this year, but the work has been chiefly masonry. This road is part of the Loni-Bári Road, and will skirt the shore of the Mahladevi tank; it is a detour necessitated by the proposed tank. The estimated cost is Rs. 22,700; and the total expenditure has been Rs. 9,643.

82. The widening of the Vita Ghát was continued; kerbing has been provided where it was left unfinished last year, the road has been surfaced and rolled, and some parapet walling has been provided, as well as some stone pitching near the foot of the ghát. It is a part of the Loni-Bári road, and now meets all the requirements of the traffic, but previous to these improvements it was so narrow as to be dangerous for traffic. The estimated cost is Rs. 8,848; and the total expenditure Rs. 6,479.

83. The country track in Akola Táluka, which was finished, in so far as the style of road admitted, last year up to Mohsa Khind, has been continued onwards from thence towards Ambit, and a retaining wall erected in the neighbourhood of Málegaon. This line is intended to provide communication between Pachnai, Ambit, Shirpunji, Dhamanwan, and the Loni-Bári road. The estimated cost is Rs. 11,645; and the total expenditure to date, Rs. 6,355.

84. The Chichundi Ghát Road has been nearly completed, except consolidation. The ghát portion of the Nagar-Chichundi road had a very steep gradient, nearly 1 in 7½, and the

portions above and below it were so much damaged that they acted like nálas. The whole of the ghát will be completed after the rains. The estimated cost is Rs. 2,809; and the total expenditure Rs. 1,500.

85. In the Násik Collectorate, of the improvements to the Satighat Road, described last year as a work of improvement, metalling, and re-bridging of a much curved ghát road, leading into the south of the Peint district, about five miles in length, about a mile has been finished, and the remainder is in a forward state. The estimate amounts to Rs. 29,950, but requires revision. The total expenditure to end of 1885-86 was Rs. 21,855.

86. The construction of the road from Násik *vid* Dindori and the Ivat Bári to Kalvan, 44 miles in length, was resumed in the year under review; 32 miles, or from Násik to the top of the Ivat Bári were finished and opened two years ago, but no funds were available for construction in the succeeding year, but during the year under review work was completed to the 34th mile, and in progress to the 38th mile. The total outlay has been Rs. 1,25,570.

87. The road from Hasteh to Bareh was begun late in the year under review, and Rs. 898 were spent out of an allotment of Rs. 905. This road is an extension below ghats of the Nánáshi Ghát Road, which was finished in the previous year, for the development of the northern part of the Peint districts and its valuable teak forests, and is to be about 4½ miles in length, and formed with moorum, the estimated cost being Rs. 25,876.

88. The renewal of five dips at nála crossings near Málegaon, on the Satána-Málegaon Road, was commenced in the year; it consists of building hammer-dressed stone and lime paving on a concrete bed, with curb walls, where necessary. The crossings had become almost impassable for wheeled traffic; the work is finished at Lendi Nala, and nearly finished at Landha Nalla. The estimated cost is Rs. 3,057, and the outlay during the year Rs. 1,136.

89. In the Khándesh Collectorate, the third section of the Songir-Nandurbar Road, 12 miles in length, from Dondaicha to Ranalla, was completed and opened for traffic during the year. On the road small nálas are provided with culverts and drains, but large nalas are provided with Irish bridges. The total expenditure has been Rs. 61,501, of which Rs. 10,573 were spent in the year. The fourth section of the same road, 12 miles in length, from Ranalla to Nandurbár, was also in progress, and the embankments almost completed, moorum spread for 6 miles, and drains and culverts under construction. The expenditure to date has been Rs. 18,983, out of an estimate of Rs. 62,746.

90. Of the Dondaicha-Sháháda Road, the portion, seven miles in length, from Dondaicha to the Tápti river, will probably be opened for traffic during the coming monsoon. The embankment of the northern portion, from the Tápti river to Sháháda, is completed, and moorum work is in progress. The expenditure has been Rs. 35,270, out of the estimated cost of Rs. 1,17,083.

91. The metalling of the Songir-Dondaicha Road, four miles, was consolidated last monsoon, and metal stacked at road-side up to mile 19; the expenditure having been Rs. 26,447, out of the estimate of Rs. 51,980

92. The Jalgaon and Dharangaon Road was completed by the construction of an inspection bungalow at Dharangaon during the year. The total expenditure has been Rs. 98,692.

93. On the Dharangaon-Chopda Road, the embankment from Dharangaon to the river Tápti, a length of 10½ miles, was completed before last monsoon. As all the moorum has been collected, the whole length of 10½ miles will be opened for traffic during the coming monsoon. The expenditure has been Rs. 19,001, out of an estimate of Rs. 44,142.

94. On the Dhulia and Amalner road, five miles of embankment, and four miles of moorum surfacing, were completed, and the drains and culverts in progress. Drains and culverts are provided to all small water-courses, but Irish bridges only to large nálas. Expenditure Rs. 7,209, out of an estimate of Rs. 34,992.

95. The improvement of a portion of the road from Kására to Chagal, which consisted in making an embankment with moorum surfacing over about ½ mile of rich black soil, was completed during the year at a cost of Rs. 2,119.

96. The Nasirabad and Bhadli road, 1½ miles in length, which is a railway feeder from the rich town of Nasirabad, was commenced towards the close of 1884-85, and opened for traffic during last monsoon, at a total outlay of Rs. 6,027.

97. The metalling of the portion of the Mhasawad-Erandol Road from Mhasawad Railway Station to the River Girna was completed at a cost of Rs. 2,105.

98. In the Northern Division the roads in progress were as follows:—In the Thána Collectorate, the Provincial road from Jawhár to Dáhánu was completed for 14 miles (including one mile of the Sawta branch) with earthwork, moorum, and 23 culverts and drains, and the earthwork for a further seven miles finished, and moorum sufficient for five miles collected, at a total outlay from commencement of Rs. 82,287.

99. Of the Local Fund roads, the Bhiwndi and Váda Road, 25½ miles, is completed with earthwork, moorumming, and 117 culverts and drains, and a bridge of concrete, of two spans of 31 feet each, at a total outlay of Rs. 1,14,664.

100. The work on the 4th section of the Kalyán and Malsej Ghát Road was resumed, and five miles of earthwork, and three miles of moorumming, have been completed during the year, together with five culverts and drains. The outlay of the year was Rs. 5,318, and the total Rs. 23,077.

101. In the Surat Collectorate, the Local Fund road from Surat Railway Station to Ashwinikumar has been completed at an expenditure of Rs. 10,815; and the whole of the cross drainage works on the road from Olpád to Kudrama were completed at a total outlay, from Local Funds, of Rs. 17,807.

102. In the Kaira Collectorate, the road from the Dákor and Kapadvanj line towards Baad and Modása, and the road from Baad to Bibipura, described in the last year's report, have been completed, with the exception of metalling, and the construction of a bridge over the Watrak river near Bibipura. Metal will be spread and rolled during the ensuing year, and the work of preparing materials, &c., for the bridge, which is to consist of eight spans of 50 feet each, will be put in hand on the opening of the next fair season. The total expenditure on these two roads up to the end of the year was Rs. 93,712 and Rs. 9,833, respectively.

103. In this District, on roads where the traffic is heavy, a layer of stone is being gradually put on kunker metalling. On the Nadiád and Mahudha road the first five miles were treated in this manner last year, and the remaining half of this road has been metalled this year, at an outlay of Rs. 14,724; and metal is also being collected for a three-inch layer over the Wasad and Borsad road, and over miles 1 and 2 of the Kaira and Sábarmati road.

104. The road from Baredjdi Railway Station to Naika, described in last year's report, has been completed and opened to traffic. The outlay on the two sections of this road in the Kaira and Ahmedabad Collectorates during the year has been Rs. 1,700, and Rs. 3,225, respectively, and the total outlay, including compensation for land, Rs. 65,627 and Rs. 26,904, from Local Funds.

105. The other works of importance that were in progress during the year are building culverts on the roads from Godhra to Sehera and to Sunth. These roads are intended to join the Railway Station at Godhra with Lúnávada and Sunth, which are the capitals of the States of the same names. On the Sehera road three-fourths of the work has been done, and it is expected that, by the end of 1886-87, all the bridges and culverts will be completed and opened to traffic. On the Sunth road it is to be regretted that, owing to sickness amongst the subordinate establishment, the progress has not been as satisfactory as could be wished under ordinary circumstances, but most of the work on the first section of 10 miles has been completed, and earthwork and the preparation of materials for the remaining section of 10 miles were in progress during the year; the completion of all the work on this line will probably require about two more seasons. This line passes through a jungle and very unhealthy country, where labour is very scarce. The outlay on these works during the year has been Rs. 8,413 and Rs. 5,589, respectively, and the total outlay Rs. 28,221 and Rs. 18,586.

106. In the Ahmedabad Collectorate, the metalled road from Dhandhuka to Ranpur, 18 miles in length, begun in 1881-82, was completed this year, the total expenditure having been Rs. 82,433. The surface of the road, which is of river gravel, appears to be standing the traffic well.

107. In Sind, a new road, five miles in length, for establishing communication between the town of Khairodero and the Naodero Station on the Indus-Valley Railway, was completed at a cost of Rs. 3,000, from Local Funds.

2.—BRIDGES.

108. In the Belgaum Collectorate, masonry bridges over the Gomari and Ramapur nálas, on the Belgaum and Linganmat Road, were completed during the year for Rs. 6,020 and Rs. 8,321, respectively; as were also 3 timber-topped culverts on the road between Oodgaum and Miraj, at an outlay of Rs. 7,085.

109. In the Kánara Collectorate, a bridge, of one span of 35 feet, over the Chawati nála, on the Yellápur and Sirsi Road, in progress last year, was completed this year, at an outlay of Rs. 6,558; and a bridge of two spans of 25 feet each over the Nashi nála, on the Shetowna and Kadra Road, was in progress, the outlay during the year having been Rs. 879, out of the estimated cost of Rs. 3,868.

110. In the Ratnágiri Collectorate, the bridge over the Avera nála, on the road from Hatkhambe to Dájipur (Ratnágiri to Phonda Ghát), was in progress; the outlay up to the end of the year amounting to Rs. 8,304, against the estimated cost of Rs. 11,525.

111. In the Kolába Collectorate, a bridge, of three spans of 25 feet each, over the Sagaon River, on the road from Alíbág to Dharamtar, was completed during the year, at an outlay of Rs. 6,991, and opened to traffic before the monsoon.

112. The wooden superstructure of the Kolevadi Bridge, over the Panvel Creek, on the Ulva-Campuli Road (the old military road from Bombay to Poona), having been discovered to be in an advanced state of decay, the substitution of iron girders for the timber superstructure was sanctioned at an estimated outlay of Rs. 11,148, of which Rs. 6,998 were spent during the year.

113. In the Poona District, a bridge over the Indráyani river at Indori, was commenced. This bridge is on the Vadgaon-Shikrápur road, which, from its junction with the Násik road, is an important feeder to the G. I. P. Railway at Talegaon, and carries a considerable traffic throughout the year. The want of a bridge at Indori, where the Indráyani river, with a catchment area of 210 square miles, crosses the road some three miles to the east of Talegaon, has long been felt, and this want is now being supplied at an estimated cost of Rs. 81,443, a moiety of which is to be contributed from Provincial funds, and the remainder is to be provided from Local Funds. The bridge, which is of stone masonry throughout, consists of 7 segmental arched openings of 40 feet each. The piers and abutments are to be carried to a height of about 27 feet above the river bed; when finished, the bridge will be 41 feet above the bed of the river. The foundation throughout is hard rock, at depths varying from 4 to 27 feet. The project comprises 4,214 feet of approach road on the east, and 4,296 on the west, sides. The work was commenced in December last, and fair progress made during the year, and it is hoped that before the monsoon sets in the abutments and piers will be raised to a height of about 10 feet above the bed of the river. The expenditure has been Rs. 11,576, from Local Funds.

114. In the Surat District a steel wire suspension bridge was constructed at Wandrawadi in the Párdi Táluka, at an outlay of Rs. 2,687 from Local Funds. The span is 150 feet, and width of roadway four feet. The roadway is carried on wrought iron bars, $\frac{3}{4}$ of an inch in diameter, hung to suspension cables by wrought iron ties and bracings; the roadway consists of imitation asphalte, laid over corrugated iron sheeting; the suspension wire cable is $1\frac{1}{2}$ inches in diameter, and is suspended from piers made of old rails braced together, and made fast to heavy old guns buried in position under ground.

115. In Sind, the Kambar and Shahdádpur road was bridged at a cost of Rs. 4,301; the Kambar and Sujáwal road at a cost of Rs. 4,423; and the Gogharo and Bakrani road at a cost of Rs. 3,096, from Local Funds. A bridge, of 24 feet span, across the Sadabharwah, on the road from Unarpur to Bund Tinat, was also commenced. The cost is estimated at Rs. 3,877, of which Rs. 1,298 were spent.

5.—BOAT-BRIDGES AND FERRIES.

116. The construction of a wire rope ferry and a twin ferry boat on the Malprabha River at Kamatgi, in the Bijápur Collectorate, on the Hungund-Bágalkot Road, was commenced, the expenditure being Rs. 2,687, against the estimated cost of Rs. 6,387, from Local Funds.

117. In the Násik Collectorate, a flying bridge, with approaches, &c., across the river Darna at Chehedi, on the Násik-Poona Road, described in last year's report, as of the usual double-boat pattern of ferry raft attached to a fixed wire rope, was completed and brought into use in the year; the total outlay having been Rs. 9,301.

6.—ACCOMMODATION FOR TRAVELLERS.

118. In the Ahmednagar Collectorate a new dharmshálla at Belwandi Railway Station has been completed at a cost of Rs. 1,874. The building consists of two main quarters, one for Europeans, and the other for natives, and its external dimensions are $35' \times 46'$. Such dharmshállas are being built by the Local Funds at those stations to which feeder roads run, as the stations themselves provide no accommodation for travellers.

119. In the Khándesh Collectorate a dharmshálla at Koosamba was completed during the year, at a cost of Rs. 1,084, from Local Funds.

120. A travellers' bungalow at Baroda, to cost, with servants' quarters, Rs. 11,311, was commenced: it consists of three main rooms, three bath-rooms, two dressing rooms, and verandahs, front and rear. The bungalow itself has been completed, and the whole allotment, Rs. 8,000, spent.

121. In Sind musafirkhánas at Shah Godro and Nasir Mahomed, in the Shikárpur Collectorate, were built at a cost of Rs. 2,500 each, from Local Funds.

III.—MISCELLANEOUS PUBLIC IMPROVEMENTS.

122. The total outlay under this head has been Rs. 4,23,270, of which Rs. 2,66,818 have been expended on Original Works; Rs. 57,714 on Repairs; Rs. 94,040 on Establishment; and Rs. 4,698 on Tools and Plant. The principal works under execution, or completed were:—

5.—WATER-SUPPLY.

123. In the Belgaum Collectorate, a well at Mabnur, in the Parasgad Táluka, was completed during the year, at an outlay of Rs. 2,949, from Local Funds.

124. In the Bijápur Collectorate, the restoration of the tank between Sunag and Tumbarmatti, in the Bágalkot Táluka, was completed, (from Local Funds); and the construction of a draw-well at Kajidoni was commenced, the estimated cost being Rs. 4,431.

125. In the Thána Collectorate the work of strengthening the bund of the Wadala Tank, used for the water-supply of the town of Bhiwndi, was completed. The tank was partially breached during the monsoon of 1883, and to prevent a similar mishap recurring, a concrete wall, four feet thick, has been constructed in the centre of the bund, and the waste weir has been enlarged, so as to run off a rainfall of 2 inches, without raising the height of the water in the tank by more than 1 foot 6 inches. The total outlay has been Rs. 4,526.

126. In the Kaira Collectorate improvements to 14 tanks, all required for village water-supply, were in progress. Of these five have been finished, others have made good progress, and most of them will be completed during the ensuing year. The total outlay during the year has been Rs. 13,192, from Local Funds. One well has been built at Sunda, on the road from Kapadvanj to Baad, at a cost of Rs. 1,066.

127. In the Ahmedabad Collectorate, works estimated to cost Rs. 2,324 were undertaken, from Local Funds, to improve the water-supply of a tank at Mandal, by diverting into it a nála passing near. The supply has been considerably increased, though the rainfall was very deficient, but it is probable that some small additions will be found necessary.

128. In the Surat Collectorate, the work of improving the tank at Bhatta in the Chorási Táluka, from Local Funds, was commenced, and Rs. 1,000 were expended in collecting materials, out of the sanctioned amount of Rs. 2,550.

129. In the Poona Collectorate, the Junnar water supply works are practically complete. The Municipality wish for an extension of distribution in the town, but this has been placed in abeyance until the capabilities of the storage reservoir are determined by experience. The Talegaon water supply also has been completed, with the exception of the distribution in the town, which is delayed for want of funds; as well as the Sirúr water supply, except the distribution in the town and working gear of the pump, which are in progress.

130. In the Sátára Collectorate, unfinished portions of the Sátára water supply works were completed during the year; the foot bridge to the regulating sluice, and additional lengths of iron trough, were also finished, and repairs of damages done by the rains were made. The water was admitted into the channel at the end of February, and was flowing up to nála No. 124, situated in the village of Petri, in the 9th mile of the canal. The level of water in the tank at the commencement of the year was 14·86 feet above the sill of outlet sluices, decreasing gradually, till on 27th May it stood at 12·50 feet above the sill; on the 17th July the water commenced to flow over the waste weir.

6.—DRAINAGE.

131. At Bombay, on the ground enclosed by the Hornby Road, the Esplanade Main Road, and the Waudby Road, there are several buildings completed and in course of construction. Some of these are public buildings, and the others are private ones, standing on ground purchased from Government. There being no regular system of drainage for these buildings, it was found necessary to provide it: this system, as carried out, consists of two main lines of piping, 9″ diameter, with branches to the different buildings, measuring about 2,050 feet; along the lines of piping manholes have been constructed at distances not exceeding 200 feet, with a lamp-hole between every two manholes, where the latter are more than 150 feet apart. The total outlay on this work has been Rs. 4,752.

7.—HARBOURS.

132. In the Kolába Collectorate, the removal of the rocks in the Nágothna tidal creek between Dharamtar and Nágothna, described in last year's report, was completed during the year at a total outlay of Rs. 4,539, from Local Funds.

133. Since the formation of the Karáchi Harbour Board (shortly to be converted into a Port Trust, similar to that at Bombay), the direct connection and responsibility of the Public Works Department with the Karáchi Harbour Works practically ceased; but as an annual grant of one lákh continued to be paid from the grants assigned to this Department, for the dredging of the harbour and entrance, and a portion of the regular establishment of the Public Works establishment was employed on them, the outlay from the grant was exhibited in the Public Works accounts, and progress noticed in the annual administration reports. From the commencement of the year under report, however, the system has been altered, and the grant ordered to be paid in a lump sum annually to the Harbour Board, with the proviso that it should be expended solely on the special work for which the grant was made, and no portion of it diverted to any other work or works. Under existing orders the grant of one lákh will be paid for two years more; but the progress on this or any of the other works connected with the Karáchi Harbour will not in future be recorded in the administration reports of this Department.

8.—LIGHT-HOUSES.

134. The out-houses of the light-house on the Vengurla rocks were originally roofed with corrugated iron, a material which has proved quite unsuitable to the locality; these

roofs were a source of constant trouble, and in June 1885 were carried away by a severe storm, which also broke some of the glass of the lantern; it has been decided to place the light-house on another and more secure site, but, in the meantime, it was necessary to re-roof the out-houses, and it was determined to use concrete for this purpose; the estimated cost of the work, which has been nearly completed, was Rs. 6,740, the expenditure amounting to Rs. 6,313.

135. Subsidiary buildings to the new Light-house at Perim, reported as completed in the past year, were commenced during the year, and Rs. 1,073 expended up to the close of the year; the total estimated cost being Rs. 8,415.

MISCELLANEOUS.

136. The work of clearing and levelling ground in the Arkilla at Bijápur, and in the vicinity of the public offices and residences, has been carried on by the extramural convict gang located at Bijápur for the purpose. The expenditure on the work up to the end of the year amounted to Rs. 92,680, against the estimated cost, Rs. 1,26,331, the outlay during the year having been Rs. 44,998.

137. In the Khándesh Collectorate, the work of protecting the town of Sháháda from damage by floods from the River Gomai was in progress. This work consisted in constructing two spurs of teak uprights and brushwood, jutting out from the bank of the river above the town; it was commenced at the close of 1884-85, and will be completed during the year 1886-87. The expenditure has been Rs. 1,603.

138. At Bombay, the work of protecting the foreshore at Máhím, extending from the fort to the tannery, described in the last report, was completed during the year, at a total cost of Rs. 62,909; and the experience gained so far, which comprises the action of two monsoons, shows that the work has answered its purpose very satisfactorily. Three estimates, aggregating Rs. 1,52,380, for further protection to the foreshore, were submitted for the sanction of Government in February last, and of these, that amounting to Rs. 20,147, for protecting a length of about 1,066 feet south of the tannery, was stated to be highly desirable, and recommended for execution before the next monsoon. The properties comprised in this length are the tannery, and the land of Edalji Pestanji; and as both these owners stated in 1884 that they had no apprehensions whatever, and did not consider any works necessary for their protection, Government stated that they were not prepared to sanction any further expenditure of public money on this length, unless the owners were willing to contribute towards the protective works proposed, and that they considered, unless a valuable revenue was derived from these properties, they should not help those who refused to help themselves. On being referred to, the owner of the tannery stated that he did not require any assistance from Government, and the other offered to contribute Rs. 700 only out of the total estimated cost of Rs. 8,500 for protecting his property; and as the Collector reported that the joint revenue from these properties amounted to only Rs. 34-2-0 annually, Government have decided that no outlay of public funds should be incurred on the protection of this portion of the foreshore.

139. In the Surat Collectorate, the stone pitching for protecting the river face of the Adálat buildings at Surat has been completed, at a total expenditure of Rs. 13,200.

140. In the Broach Collectorate, an "ovára" (flight of masonry steps) has been constructed on the right bank of the Nerbadda River at Angareshwar, in the Broach Táluka, from Local Funds, at an expenditure of Rs. 3,236. The "ovára" is 20 feet wide, has masonry walls on both sides, and consists of stone steps and landings. The approach to the "ovara" has been paved with stones laid on a bedding of concrete.

141. In Sind, a sum of Rs. 3,248 was expended in re-marking the boundary between the Khairpur State and British territory, from the river bank at the north end of the Kandiáro Táluka, to the southern end of the Sakrand Táluka.

BOMBAY PRESIDENCY
Part I.
Gujárat and the Tápti Valley
Scale, 40 Miles=1 Inch.
RUN OF CUTCH
CUTCH
GULF OF CUTCH
KATHIAWAR
GULF OF CAMBAY
PALANPUR
RADHANPUR
DHRANGADRA
NAWANAGAR
RAJKOT
JUNAGARH
BHAVNAGAR
PORBANDAR
DWARKA
BHUJ
MORVI
WADHWAN
LIMRI
MUNDRA
MANDVI
ANJAR
ADESAR
KHAODA
GADHRA
JATAWADA
LUNA
NAKHATRANA
SABRAI
VIRA
JODIYA
THROL
GONDAL
JASDAN
DHORAJI
UPLETA
JETPUR
AMRELI
BANTWA
VERAVAL
PALITANA
BAGASRA
MAHUWA
JAFARABAD
DHOLERA
DHANDHUKA
WALA
GOGA
SAYLA
CHURA
MULI
WANKANER
MALIA
MORVI
TANKARIA
VARTEJ
SIHOR
GHOGHA
DHOLKA
DHANDHUKA
BARWALA
RANPUR
BAJANA
VIRAMGAM
KHARAGHODA
PATRI
MANDAL
KARI
MANSA
MAISANA
MUNPUR
SAMI
PATAN
WARAHI
MORWARA
THARA
SIDHPUR
KHERALU
VISNAGAR
VADNAGAR
KHERVA
MEHSANA
KADI
KALOL
KADI
SANAND
AHMEDABAD
SADRA
DEHGAM
KAPADWANJ
MAHUDHA
MATAR
NARIAD
KAIRA
DAKOR
UMRETH
THASRA
PARI
BALASINOR
LUNAWARA
THALOD
SUNTH
HARANA
MALPUR
MODASA
MOHANPUR
PARANTIJ
AMBERA
RAJPUR
DHARAMPUR
UMBERGAON
SILVASSA
DAMAN
DAMAN GANGA R.
KHAREPATAN
DAHANU
TARAPUR
JAWHAR
MOKHADA
VIKRAMGAD
MAHIM
BASSEIN
BOMBAY
SALSETTE
KALYAN
BHIWANDI
PANWEL
KARJAT
MATHERAN
PEN
ALIBAG
MURUD
JANJIRA
ROHA
MANGAON
MAHAD
PARTABGARH
SAGWARA
DUNGARPUR
BANSWARA
UDEYPUR
SIROHI
MOUNT ABU
DANTA
DANTIWARA
PANTHAWARA
DHANERA
DEESA
DIODAR
TERWADA
SUIGAM
BHABHAR
WAO
THARAD
VARAHI
SATLANA
DEVGARH
DEVGARH BARIA
CHHOTA UDEPUR
NARUKOT
HALOL
BARIA
GODHRA
DOHAD
JABUA
AMJHERA
DHAR
INDORE
MHOW
TO AGRA
TO AJMER
TO NASIRABAD
TO PALANPUR
TO MOUNT ABU
TO SIROHI
TO INDORE
TO BURHANPUR
TO AKOLA
TO NAGPUR
TO MALKAPUR
TO JALGAON
TO DHARANGAON
TO PACHORA
TO JAUNER
TO BHUSAWAL
TO SAVDA
TO YAVAL
TO CHOPRA
TO SHIRPUR
TO SHAHADA
TO TELODA
TO NANDURBAR
TO SINDKHEDA
TO NIZAMPUR
TO PIMPALNER
TO DHULIA
TO AMALNER
TO PARDI
TO ERANDOL
TO MHADSWAD
TO SATANA
TO BHAMGAON
TO CHIKHLI
TO GANDEVI
TO BILIMORA
TO JALALPUR
TO NAVSARI
TO SACHIN
TO HARDAR
TO SURAT
TO KIM R.
TO HANSOT
TO ANKLESWAR
TO PANOLI
TO VASTRAVI
TO OLPAD
TO SAYAN
TO PANDER
TO MANDVI
TO KOSAMBA
TO VAGRA
TO AMOD
TO JAMBUSAR
TO KAVI
TO DABHOI
TO CHANDOD
TO BAHADARPUR
TO CHHOTA UDEPUR
TO BARWANI
TO KARGUN
TO RAJPIPLA
TO PALEJ
TO NANDOD
TO BROACH
TO VARIAV
TO KHUR
TO BANTHARI
TO DHOLERA
TO DHANDHUKA
TO GOGA
TO VARTEJ
TO TANKARIA
TO SIHOR
TO GHOGHA
TO BARWALA
TO RANPUR
TO BAJANA
TO VIRAMGAM
TO KHARAGHODA
TO PATRI
TO MANDAL
TO KARI
TO MANSA
TO MAISANA
TO MUNPUR
TO SAMI
TO PATAN
TO WARAHI
TO MORWARA
TO THARA
TO SIDHPUR
TO KHERALU
TO VISNAGAR
TO VADNAGAR
TO KHERVA
TO MEHSANA
TO KADI
TO KALOL
TO KADI
TO SANAND
TO AHMEDABAD
TO SADRA
TO DEHGAM
TO KAPADWANJ
TO MAHUDHA
TO MATAR
TO NARIAD
TO KAIRA
TO DAKOR
TO UMRETH
TO THASRA
TO PARI
TO BALASINOR
TO LUNAWARA
TO THALOD
TO SUNTH
TO HARANA
TO MALPUR
TO MODASA
TO MOHANPUR
TO PARANTIJ
TO AMBERA
TO RAJPUR
TO DHARAMPUR
TO UMBERGAON
TO SILVASSA
TO DAMAN
TO DAMAN GANGA R.
TO KHAREPATAN
TO DAHANU
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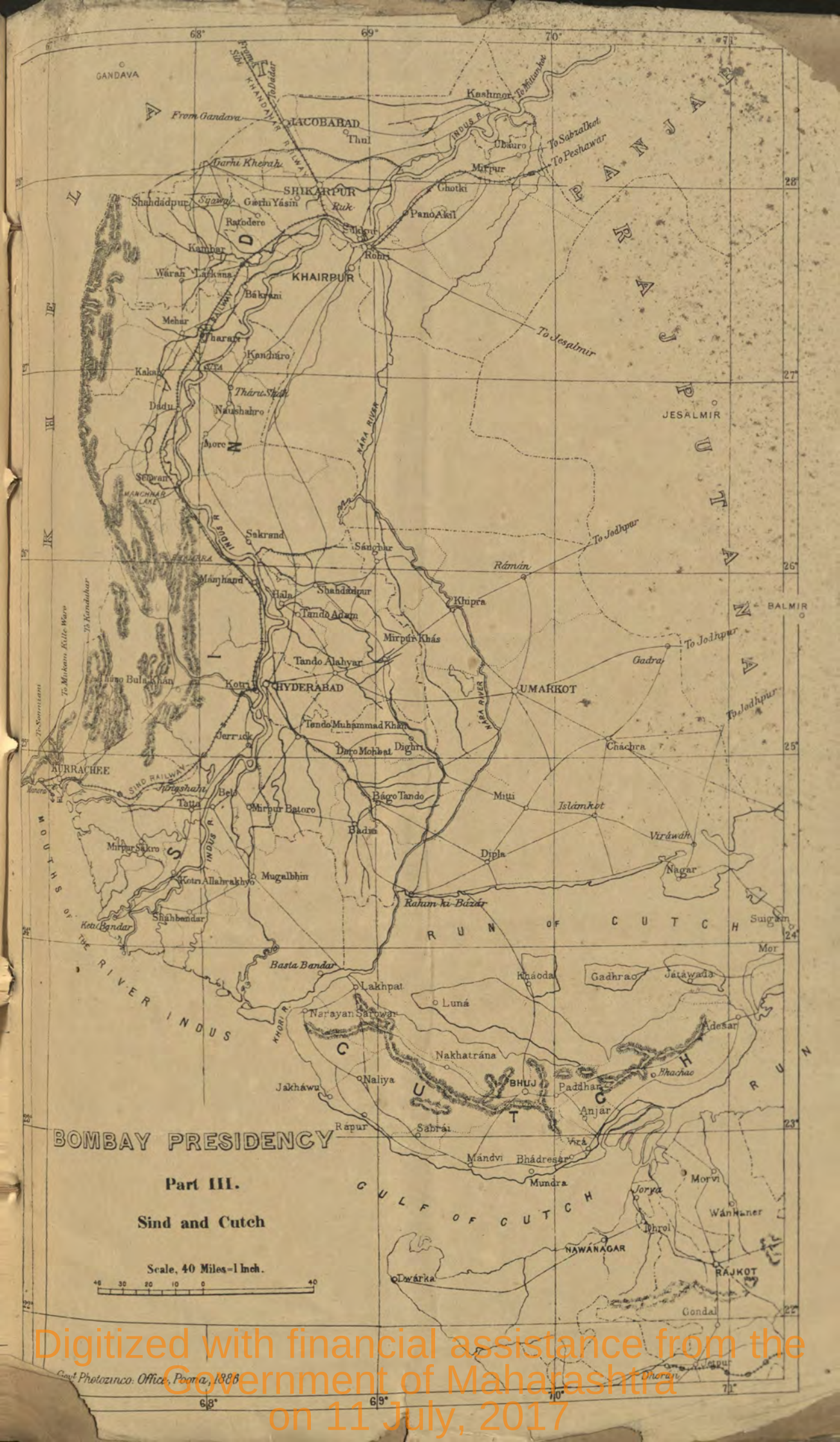

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